Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 16 (Currently amended): A beam measuring device comprising:

a magnetic shielding part, shielding an outer magnetic field; and

a plurality of magnetic field sensors, arranged in a shielding space which is formed by the magnetic shielding part, the magnetic field sensors measuring a magnetic field which a beam current to be measured generates;

wherein the magnetic field sensor includes a plurality of magnetic field collection[[,]] mechanisms which collect magnetic fields which the beam current to be measured generates; wherein the magnetic field collection mechanisms are arranged such that a superconductive surface shielding current is concentrated on a predetermined region by interrupting the superconductive surface shielding current except for a predetermined region on a superconductive surface of the magnetic field collection mechanisms;

wherein the magnetic field collection mechanism is a pipe-shaped structural body which has at least a surface thereof formed of a superconductive body and includes a bridge portion which has only a portion thereof constituted of a high-temperature superconductive body on an outer peripheral portion; and

wherein the magnetic field collection mechanism concentrates a superconductive surface shielding current which the beam current generates in the vicinity of a plurality of magnetic field sensors.

Claim 17 (Previously presented): The beam measuring device according to claim 16, wherein an insulator is arranged at the outer wall of the cylindrical structural body in a state that the respective bridge portion is partitioned so that output of each of the magnetic field sensors can easily reflect location of the beam positions.

Claim 18 (Previously presented): The beam measuring device according to claim 16, wherein a normal conductor is arranged at the outer wall of the cylindrical structural body in a state that the respective bridge portion is partitioned so that output of each of the magnetic field sensors can easily reflect location of the beam positions.

Claim 19 (Previously presented): The beam measuring device according to claim 16, wherein output signals of the plurality of magnetic field sensors are connected to an arithmetic operation circuit which calculates and outputs a current value and a position of the beam current.

Claim 20 (Previously presented): The beam measuring device according to claim 16, wherein output signals of the plurality of magnetic field sensors are connected to an arithmetic operation circuit which calculates and outputs a current value and a position of the beam current while

canceling noise signals having a same phase as the output signals of the plurality of magnetic field sensors.

Claim 21 (Previously presented): The beam measuring device according to claim 16, wherein the magnetic field sensor is a SQUID.

Claim 22 (Previously presented): The beam measuring device according to claim 16, wherein the magnetic shielding part, the magnetic field sensor and the magnetic filed collection mechanism include parts which are formed of a high-temperature superconductive body.

Claim 23 (Currently amended): A [[The]] beam measuring method which uses the beam measuring device described in claim 16, arranges the beam measuring device on the beam line which is radiated to a material to be treated from an ion source or an electron beam source, and measures the beam current value of the beam line and the position of beams based on outputs of the magnetic field sensors.

Claim 24 (Previously presented): The beam measuring method according to claim 23, wherein the beam current value of the beam line and the beam position are simultaneously measured.

Claim 25 (Currently amended): A beam control method comprising; a measurement step which measures a beam current of beams which are generated by an ion source or an electron beam source using the beam measuring method described in claim 23; and a control step which feedbacks

the beam current value and positions of beams which are obtained by the measuring step or both of the beam current value and the positions of beams to control parameters of the ion source, the electron beam source, an analysis electric magnet, a part for applying an electric field and a magnetic field to beams.

Claim 26 (Previously presented): The beam control method according to claim 25, wherein the beam radiation method includes a radiation step which radiates the beam current which is controlled using the control parameters obtained in the control step of the beam in claim 12 to a material to be treated.

Claim 27 (Previously presented): A beam radiation device which includes the beam measuring device described in claim 16.

Claim 28 (Previously presented): A material to be treated which is manufactured or inspected casing an ion injection device, an electronic beam exposure device, an accelerator or an electron beam vapor deposition device which includes the beam measuring device described in claim 16.